## Patent claims

1. Optoelectronic angle measuring instrument (1) with a dimensional standard (10), a light source (20), a collimator lens (30) and a sensor receiver (50), wherein light emitted from the light source (20) is parallel-collimated by the collimator lens (30), modulated by the dimensional standard (10), which is non-rotatably connected to a shaft (41) of the instrument, and detected by the sensor receiver (50), wherein the light source (20), the collimator lens (30), the dimensional standard (10) and the sensor receiver (50) are arranged so that an axis of rotation (3) substantially coincides with an optical axis (2), characterized in that both at least an end piece of the shaft (41) as a mechanical component and the refractive collimator lens (30) as an optical component of the instrument (1) are formed as a single plastic part (100) which accommodates the light source (20) and additional electronic components.

2. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that the following additional functional parts are molded on the single plastic part (100): a coil former (71) for a secondary coil (70), a board holder (42) for a transmitter board (25) which mounts the light source (20) and additional electronic components, and a centering device (43) on the single plastic part (100).

3. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that a diffractive dimensional standard (10) is sampled and the dimensional standard is a diffractive dimensional standard (10) molded in the single plastic part (100).

4. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that the plastic part (100) is an injection molded part made from at least one plastic component.

5. Optoelectronic angle measuring instrument (1) according to claim 4, characterized in that an injection molding die has the negative shape of the curved surface of the collimator lens (30) which is arranged concentric to the optical axis (2).

6. Optoelectronic angle measuring instrument (5) according to claim 1, characterized in that a surface of the lens (30) is aspherical in shape.

7. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that a surface of the lens (30) is configured as a stepped lens in order to reduce its axial installation space.

8. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that the plastic part (100) is substantially transparent to infrared light.

9. Optoelectronic angle measuring instrument (1) according to claim 6, characterized in that the light source (20) and a transmitter board (25) are encased by the plastic part (100).

10. Optoelectronic angle measuring instrument (1) according to claim 1, characterized in that the plastic part (100) has a molded-on centering device (43) connected to a ball bearing (46) or a shaft portion (40) whose angular position is to be measured.

11. Method for producing an optoelectronic angle measuring instrument (1) with a dimensional standard (10), a light source (20), a collimator lens (30) and a sensor receiver (50), wherein the light emitted by the light source (20) is parallel-collimated by the collimator lens (30), modulated by the dimensional standard (10) which is non-rotatably connected to a shaft (41) of the instrument, and detected by the sensor receiver (50), characterized in that both at least an end portion of the shaft (41) and the refractive collimator lens (30) are made from a single plastic part (100), and the light source (20), a receiver coil (70) and additional electronic components are encased by the single plastic part (100).

12. Method according to claim 11, characterized by positioning the light transmitter (30) arranged on a board (25) in the injection molding die, and thereafter injection molding the plastic part.

13. Method according to claim 11, characterized by giving the injection molding die the negative shape of a curved surface of the collimator lens (30).

14. Method according to claim 11, characterized by providing the lens (30) with a stepped lens surface in order to reduce its axial installation space.